



Statement of Basis

For Modification of the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion for the Treatment, Storage, and Disposal of Dangerous Waste - The Waste Treatment and Immobilization Plant Unit-Specific Conditions

September 2005

STATEMENT OF BASIS FOR MODIFICATION OF THE HANFORD FACILITY RESOURCE
CONSERVATION & RECOVERY ACT PERMIT, DANGEROUS WASTE PORTION FOR THE
TREATMENT, STORAGE, & DISPOSAL OF DANGEROUS WASTE, (WA7890008967) PART III,
CHAPTER 10, THE WASTE TREATMENT AND IMMOBILIZATION PLANT UNIT-SPECIFIC
CONDITIONS

Permittees

United States Department of Energy
(Owner/Operator)
Office of River Protection/Richland Operations Office
P.O. Box 550
Richland, Washington 99352

Bechtel National, Inc.
(Co-Operator)
2535 Stevens Center Place
Richland, Washington 99354

This Statement of Basis has been developed by the Washington State Department of Ecology (Ecology) in accordance with the requirements of Washington Administrative Code (WAC) 173-303-840(2)(f)(iv). Its purpose is to present information on Ecology's tentative decision to modify Part III, Chapter 10, Waste Treatment and Immobilization Plant (WTP) of the Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit, Dangerous Waste Portion for the Treatment, Storage, and Disposal (TSD) of Dangerous Waste, hereafter called "the Permit". This modification includes supporting technical information and engineering drawings for construction on the regulated portions of the WTP, High Level Waste (HLW) Building and the Balance of Facilities (BOF). Pursuant to WAC 173-303-830(3), only the conditions that are subject to this modification are reopened for comment.

On September 25, 2002, a Fact Sheet was prepared by Ecology pursuant to WAC 173-303-840(2)(f). This Fact Sheet provided details of the legal, methodological, and policy issues regarding permitting of the WTP. This Fact Sheet is available upon request (Ecology Publication Number 01-05-006). Ecology has elected to prepare a Statement of Basis for this permit modification, describing the derivations and resulting modifications to the WTP Permit pursuant to WAC 173-303-840(2)(f)(iv). This process is being followed for permit modifications initiated by Ecology which incorporate design package information and other changes to the WTP Permit conditions.

This Statement of Basis is divided into four sections, which include:

- 1.0 Hanford Facility Permit Background
- 2.0 The WTP Permitting Process
- 3.0 Procedures for Reaching a Final Decision on the Draft Permit
- 4.0 Proposed Modifications to the Hanford Facility Permit

1.0 Hanford Facility Permit Background

Ecology issued the Permit for the Hanford Facility in 1994. The Permit provides standard and general facility conditions, as well as, unit-specific conditions for the operation, closure, and post-closure of mixed and dangerous waste TSD units at Hanford.

The Permit is modified periodically to incorporate newly permitted units, reflect Class 1/2/3 Modifications, and include minor changes in grammar, consistency, and presentation. The Washington State Dangerous

Waste Regulations in WAC 173-303-830 describe the types of changes or modifications that may be made to a dangerous waste permit issued by Ecology.

As noted above, the WTP TSD Unit was added to the *Unit-Specific Conditions for Final Status Operations (Part III)* portion of the Permit on September 25, 2002. The permit modification was effective on October 25, 2002. The WTP Unit is currently being constructed under final status standards.

2.0 The WTP Permitting Process

The WTP Unit is being permitted using a phased (or stepped) approach. The first phase was completed on September 25, 2002, with issuance of a final permit allowing construction of specific portions of the WTP Unit Low Activity Waste (LAW) and HLW buildings, and a compliance schedule to provide additional detailed information to support future permit modifications. The compliance schedule addresses submittal of information necessary for construction of the WTP Unit, and eventual operation. The second phase of permitting is implementation of the first portion of the compliance schedule, which requires design and other information be submitted before regulated portions of the WTP Unit are constructed. The third phase of permitting is implementation of the last portion of the compliance schedule, which requires updating portions of the Dangerous Waste Permit Application that were incorporated into the final Permit. These portions of the Permit are more administrative in nature, and cannot be completed before the design is nearly complete (e.g., Contingency Plan, Closure Plan, Training Plan). It is anticipated that at the completion of these three phases, the WTP Unit will be in compliance with all the relevant requirements of WAC 173-303, and after receiving written permission from Ecology, can begin storage and/or treatment of dangerous and/or mixed waste. For more details on the WTP permitting process, see the September 25, 2002, Fact Sheet.

The design submittals (second phase described above) have been structured to allow the Permittees to provide design information in roughly the same order as the buildings are constructed. Therefore, the packages start at the lowest level (floor) of the building (i.e., below grade levels) and are submitted for regulated systems in each level of the building before construction begins. This process has been modified for some design packages. If the regulated system in the design package is located on more than one level in a WTP Building, the design package can address components on more than one building level. This will prevent the confusion caused by one regulated system description being segmented into multiple design packages.

The Permit divides design packages into three general groups based on the type of regulated equipment:

- (1) Secondary containment;
- (2) Primary containment (e.g., tanks, miscellaneous units [i.e., evaporators and melters], containment buildings, etc.); and
- (3) Other associated regulated equipment (e.g., ancillary equipment and equipment associated with miscellaneous units).

Using tank systems as an example, secondary containment packages include details of the design of secondary containment that must be in place in regulated areas when the floors and walls are built for each level of the building (e.g., floor slope, sump location). Construction of the floors and walls is usually followed by the installation of tanks and other large equipment. Therefore, a tank package will be included in the Permit before installation (e.g., structural details for tanks or miscellaneous units showing nozzle locations, unit volumes, tank shell thickness, etc). The last equipment usually installed for a tank system is the ancillary equipment (e.g., piping, pumps, process instrumentation, electrical equipment). Therefore, the ancillary equipment package that provides details for equipment on each level will be included in the Permit before installation (e.g., materials of construction, pipe support details, pump types and their operating limits).

Since each WTP Building consisting of multiple levels, the total number of design packages is large. The Permittees estimate about 150 packages will have to be incorporated into the Permit. Ecology has followed a practice of grouping packages, where possible, to maximize the efficiency of public comment periods.

The secondary containment, primary containment, and other associated regulated equipment packages for different levels require repetitive information to be submitted in each package. Again, using tank systems as an example, the method of installation of secondary containment liners on each level is expected to be the same and most tanks will use the same construction specifications. The Permit allows the Permittees to reference the previously submitted design information. Therefore, some design packages may consist mostly of references to information previously provided.

3.0 Procedures for Reaching a Final Decision on the Draft Permit

The Washington State Hazardous Waste Management Act, Chapter 70.105 Revised Code of Washington (RCW), and regulations promulgated in Chapter 173-303 of the WAC, regulate the management of dangerous waste in Washington. In accordance with WAC 173-303-800, facilities that treat, store, and/or dispose of dangerous waste must obtain a permit for these activities.

Ecology has received additional information from the Permittees and has decided in accordance with WAC 173-303-840 (10) to modify the permit. A 45-day public comment period for proposed permit modifications to Part III, Chapter 10, WTP, of the Permit begins on September 12, 2005 and ends on October 27, 2005. All comments received during the public comment period will be considered and responded to before final decisions are made on the proposed modifications. Regulatory requirements for public notice and involvement (for this permit modification) are described in WAC 173-303-840(3). Comments must be post-marked or received by e-mail no later than October 27, 2005. Comments hand delivered by close of business October 27, 2005, to the address below also will be accepted. Direct all written comments to:

Ms. Brenda Becker-Khaleel
Department of Ecology
3100 Port of Benton Blvd.
Richland, Washington 99354
E-mail address: bbec461@ecy.wa.gov

A public hearing will be held at the Department of Ecology, (address shown above), if requested during the public comment period.

Ecology will consider and respond to all written comments submitted by the deadline, and verbal comments submitted at the public meeting, if held. Ecology will then make a final permit decision, which will become effective 30 days after Ecology provides notice of the decision to the Permittees and all who commented. If Ecology's decision includes substantial changes to the Permit because of public comment, Ecology will initiate a new public comment period.

All commenters and the Permittees will receive a copy of the Responsiveness Summary and a notification of the final permit decision. Ecology's final permit decision may be appealed within 30 days after notice of the final permit decision has been provided.

Copies of the Permit for the Hanford Facility, including the proposed permit modifications are available for review at the Hanford Public Information Repositories listed below. For additional information, call the Hanford Cleanup Hotline toll-free at (800) 321-2008.

HANFORD PUBLIC INFORMATION REPOSITORIES

Portland

Portland State University
 Branford Price Millar Library
 Attn: Judy Andrews
 (503) -725-4126
 934 SW Harrison
 PO Box 1151
 Portland, OR 97207-1151

Richland

DOE Public Reading Room
 Attn: Janice Parthree
 Washington State University, Tri-Cities
 Consolidated Information Center, Room 101-L
 2770 University Drive
 Richland, Washington 99354
 (509) 372-7443

Spokane

Gonzaga University
 Foley Center
 Attn: Linda Pierce
 (509) -323-6110
 East 502 Boone
 Spokane, WA 99258-0001

Seattle

Government Publications Division
 Suzzallo Library , University of Washington
 Attn: Eleanor Chase
 Box 352900
 Seattle, Washington 98195-2900
 (206) 543-4664

This Statement of Basis for the proposed draft permit modification is also available on the World Wide Web at <http://www.ecy.wa.gov/programs/nwp/>.

If special accommodations are needed for public comment, please contact Tim Hill, Department of Ecology, Nuclear Waste Program, at (509) 372-7908 (voice), or (360) 407-6006 (TDD).

4.0 Proposed Permit Modification to Part III, Chapter 10, WTP of the Permit

The proposed Draft Permit Modification to Part III, Chapter 10, WTP of the Permit includes:

- Inclusion of design packages into the Permit (Listed in Table 1):
 - BOF – 07, Revision 0, Secondary Containment for Transfer Lines Below Grade
 - BOF – 08, Revision 0, Ancillary Equipment For Transfer Lines Below Grade
- Other changes include:
 - Incorporation of permit condition III.10.C.2.h. and changes to III.10.C.9.d, III.10.C.9.e, and III.10.C.9.h.
 - Incorporation of 24590-HLW-PER-M-04-002, Revision 2, Leak Detection Capability in the HLW Facility
 - Incorporation of 24590-HLW-PER-M-04-0001, Revision 0, HLW Facility Waste Removal Capability
 - Incorporation of several Class 1 and/or Class ¹1 Permit modifications including changes to Part III, Chapter 10 of Appendix 51 which were approved by Ecology in accordance with WAC 173-303-830(4)(a) and include:
 - 24590-WTP-PER-CSA-02-001, Revision 7, Secondary Containment Design
 - Added notes to four Piping and Instrument Diagrams for the HLW Radioactive Liquid Disposal System:
 - 24590-HLW-M6-P0015, Revision 0
 - 24590-HLW-M6-P0017 Revision 0
 - 24590-HLW-M6-P20004, Revision 0

4.1 Supplemental Design Information

Table 1 lists the design information included in this proposed permit modification and the proposed location in the Permit. At final issuance of the permit modification, Ecology will specify where each drawing or report resides in the Permit. Paper copies of the page changes to the Permit as a result of this modification will be stored in the Administrative Record. Duplicate sets of drawings will not be issued to the Permittees at issuance of the permit modification in order to minimize the amount of duplicate paperwork, unless drawing changes are made as a result of public comment. The letter issuing the modification to the Permittees will include the current Permit with the modifications on a CD-ROM.

4.2 Other Changes Included in This Modification

As the WTP Unit is constructed, Ecology will modify the Permit, for many reasons including: to clarify text, add new conditions, delete existing conditions, to correct errors or add additional information. To communicate the changes in the review package, the proposed permit modification will include page changes showing all significant proposed changes to the Permit. The text to be deleted will be struck-out with a single line and the new text will be double-underlined. Only the text being changed in the current modification will be indicated by double underlines and strikeouts. At issuance of the permit modification, 'clean' pages incorporating permit modifications will be issued to the Permittees and Administrative Record.

Table 1 - Design Packages Submitted by Permittees

PACKAGE BOF-007, Rev 0, Secondary Containment for Transfer Lines Below Grade			
DOCUMENT/ DRAWING NUMBER	TITLE	REPLACES	PERMIT LOCATION
24590-WTP-PER-PL-02-001, Rev 6	Piping Material Class Description	Rev 5	7.02
24590-WTP-PER-J-02-002, Rev 3	Low-Point Leak Detection in Secondary Containment Systems including Buried Co-Axial Transfer Lines	Rev 2	7.05
24590-WTP-3PS-PX04-TP001, Rev 1	Engineering Specification for Shop Applied Fusion Bonded Epoxy Coating for Underground Carbon Steel Pipe	Rev 0	7.07
24590-CM-HC4-HXYG-00138-02-00056, Rev 00A	IQRPE Independent Assessment Report	N/A	7.11
PACKAGE BOF-0008, Rev 0, Ancillary Equipment For Transfer Lines Below Grade			
DOCUMENT/ DRAWING NUMBER	TITLE	REPLACES	PERMIT LOCATION
24590-PTF-M6-PWD-P0057, Rev 2	Piping & Instrumentation Diagram; Plant & Disposal System, Underground Transfer-Lines	Rev 0	8.02
24590-PTF-M6-PWD-P0058, Rev 3	Piping & Instrumentation Diagram; PWD System, Underground Transfer Lines	Rev 0	8.02